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ABSTRACT

The study examined the division of decision-making and farm tasks in a joint father and son enterprise, the extent to which the decisions tended to be shared equally, and the extent to which the principal operator had responsibility for those tasks not shared. Data were collected in 1974 from fathers and sons who were joint operators of 145 farms located in 12 counties and 5 different farming areas of Kentucky. They were asked to respond to 56 questions covering typical farm decisions and tasks in 6 major livestock and crop enterprises--beef cattle, hogs, dairying, tobacco, corn, and soybeans. Respondents indicated whether the decision or task was performed by the father only, father mostly, father and son equally, son mostly, or son only. In order to indicate the process of transfering the principal responsibility for the farming operation, the decisions and tasks were analyzed by age of the father and of the son. Findings included: the joint arrangement was typically informal and verbal rather than expressed in a written document; the father was considered the principal operator on 70% of the farms; the tendency for the father to hold principal operator status declined with increasing age of the father and of his son; principal operator status was associated with a tendency to control unshared tasks and decisions; and the sons' involvement in decisions and tasks increased when he became the principal operator and as the father increased in age regardless of whether the father retained the status of principal operator. (JC)

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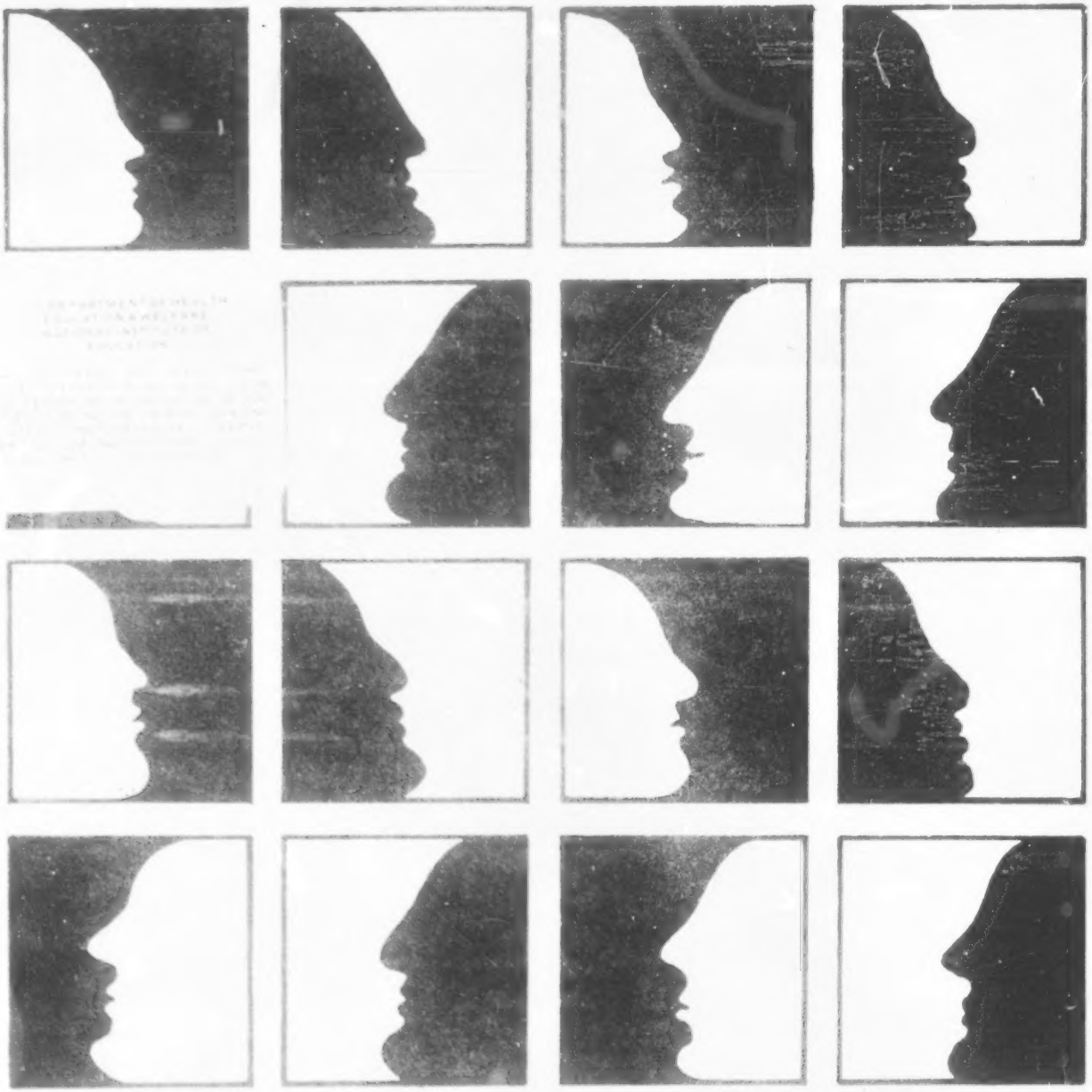

TRANSFER OF DECISION MAKING AND FARM TASKS FROM FATHER TO SON IN FATHER-AND-SON FARMING ARRANGEMENTS

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SUMMARY OF FINDINGS

For a sample of 145 father-and-son (partnership) farms in Kentucky:

1. The joint farming arrangement was typically informal and verbal rather than expressed in a written document.

2. The father was considered as the Principal Operator and his son as the Secondary Operator on 70% of the farms. The son was the Principal Operator on 30% of the farms.

3. The tendency for the father to hold Principal Operator status on these farms declined with increasing age of the father and of his son.

4. More than half of 56 different farm decisions and tasks were shared equally by fathers and sons on these farms.

5. Fathers, as Principal Operators, most often controlled those decisions and tasks which were not equally shared.

6. Sons, as Principal Operators, most often controlled the decisions and tasks that were not equally shared with their fathers. Sons were more involved in instrumentally related (farm work) tasks than in farm policy and managerial decisions. Thus, Principal Operator status was associated with a tendency to control unshared decisions and tasks.

7. Sons more often had primary control of the decisions involved in dairying or hog enterprises than for other types of major enterprises, e.g., beef cattle, corn, soybeans, or tobacco.

8. The sons' involvement in farm decisions and tasks increased when he became the Principal Operator and as the father increased in age regardless of whether the father retained the status of Principal Operator.

9. The fathers tended to retain Principal Operator status and decision-making control past the age when they would have been able to operate the farm with greatest efficiency if they had been operating it alone. There is some indication that the father's failure to more quickly relinquish primary control of farming operations as he grows older may be contributing to less efficient farming operations.

10. Compared with Secondary-Operator fathers aged 45 to 64 years, Principal-Operator fathers of this age had younger sons, who were more often interested in crop (especially tobacco) than livestock enterprises, and the fathers were less worried about indebtedness and more interested in expanding the farm and getting labor-saving equipment. Principal-Operator fathers (and sons), thus, appear to be more satisfied with current farming plans and to have fewer incentives to alter the status or decision-making arrangement of the partnership.

TRANSFER OF DECISION MAKING AND FARM TASKS FROM FATHER TO SON IN FATHER-AND-SON FARMING ARRANGEMENTS*

C. Milton Coughenour, Gregory S. Kowalski, and Barbara Wakefield**

INTRODUCTION

Partnership farms in which two or more persons either do the work together, or directly supervise it, are becoming more important in Kentucky agriculture. In 1969 the Census of Agriculture enumerated 10,203 such farms, or about one out of six of the commercial farms in Kentucky with gross sales of $2,500 or more (Economic Classes I to V). Partnership farms were larger (averaging 245.3 acres) than all commercial farms of these size classes (189.5 acres), and 21.7% of the total acreage farmed was under the control of partnerships. For several reasons it is likely that this kind of farm organization will become more important in the future.

Father-and-son farming arrangements, which are one type of partnership, always have been common. The arrangement usually has been informal, and, in the past, it has been typically of short duration. So long as most farms were small, a single farm seldom provided sufficient income for more than one family. Moreover, a young man could start farming on his own with relative ease. Under these circumstances, the father-and-son farming arrangement was primarily a device to enable the son to acquire sufficient capital to become independent.

As smaller farms have disappeared and the surviving farms have become larger, however, this situation has changed. The management and operation of a large scale farm often requires more than the time and labor of one man, especially as he grows older, and the income generated by the farm often provides sufficient income for more than one family. At the same time, the increased capital requirements for independent farming operations have made it more difficult for a young man to establish a satisfactory farming operation on his own without parental support over a prolonged period of time.

These conditions of modern agriculture tend to magnify the cycle in economic efficiency of farming operations which is associated with the human life cycle of the principal operator (Harl, 1972:279-284; Heady et al., 1953; Rogers and Burdge, 1972:192). Generally, the efficiency of the farming operation is highest during the middle years of the operator's life and lowest at the beginning and at the end of the work career. This cycle is shaped by both economic and social considerations.

In the first stage, when the farmer is beginning to farm, his management ability, equity capital, and borrowing capacity are typically low. Moreover, with the establishment of a family, the household competes for the limited income

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which the farm provides. Thus, while there may be sufficient labor for a larger scale of operation, the farmer has considerable difficulty in acquiring the necessary capital for the development of an efficient farming program.

By the time that the farmer reaches 35 years of age these imbalances tend to be corrected. Management capability has been increased through experience, and capital accumulation, together with the possibility of additional debt capital, makes the capital resources more adequate. Moreover, the children are old enough to begin to provide additional labor inputs or to increase family income through off-farm employment. During this stage, therefore, the farm is likely to be operating at peak efficiency, and the family is most likely to enjoy its greatest prosperity.

In a few short years, however, the children begin leaving home for other employment or higher education. As a result, the capital resources begin to exceed the supply of readily available labor and are used less efficiently. Moreover, the farm planning period becomes shorter as the farmer begins to anticipate his own retirement. Part of the farm may be sold, and the farmer and his wife may begin living off their accumulated capital resources as the income from the farm itself gradually declines.

Clearly, some of the problems associated with this cycle as well as some of the difficulties of both younger and older farmers can be eased by a gradual transfer of the farming operation to younger hands. A father-and-son partnership or a family corporation is a means of accomplishing such an objective. Nevertheless, because of their newness and the legal and social difficulties associated with partnerships or corporate solutions to the transfer problem, neither is as common a feature of Kentucky agriculture as the need would seem to justify. Part of the difficulty arises from lack of information about the nature of decision-making and the division of farm tasks on father and son farms. While farmers confront problems of working out satisfactory joint decision and task arrangements and of altering them as the years pass by, Extension Agents lack the necessary information about this type of farming operation to enable them to serve effectively as advisors.[1]

The general purpose of this report, thus, is to help provide information on the way farm decisions and tasks were performed on a sample of father and son farms in Kentucky. Responsibilities for these decisions and tasks are analyzed by age of the father (and of the son) in order to indicate the process by which the transfer of principal responsibility for the farming operation takes place.

The data on which the analysis is based were collected in 1974 from fathers and sons who were joint operators of 145 farms. The farms were located in 12 counties and 5 different farming areas of Kentucky and represent different livestock and cropping systems existing in the state.[2]

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[1]The Kentucky Cooperative Extension Service, with the cooperation of members of the Kentucky Bar, has made a significant attempt to aid in the solution of these problems through workshops and other meetings on estate planning. See also Duncan, Whiteside, and Williamson (1974), and Duncan, Whiteside, and Stevens (1973).

[2]The counties were Bourbon, Caldwell, Carlisle, Graves, Henderson, Harrison, Larue, Lyon, Nicholas, Pulaski, Washington, and Webster.

To qualify as a father-and-son farm for purposes of this study, the father and son had to be engaged in a joint farming operation. Consequently, the farms studied, which were identified from lists of operators supplied by Extension Agents and officials of other agricultural agencies, were restricted to those in which the son was at least 17 years old and either engaged in full-time farming operations with his father or planning to do so upon completion of his schooling. Even so, on only 22 (15%) of these farms was there any kind of formal, written agreement governing the father-and-son relationship or the division of profits from the farming operation. This situation reflects both existing practice and the problem of planning an orderly transfer of the farm from the father to the son.

The analysis is designed to answer several questions. First, in a father-and-son farming operation where most activities are shared is there, nevertheless, a Principal Operator, and, if so, which one is the Principal Operator? Despite the sharing of responsibilities on father-and-son farms, both invariably regarded one of the partners as the Principal Operator, and in 7 out of 10 cases it was the father. In itself this is not particularly surprising in that the father is almost always the Principal Operator if the partnership is established while the son is still relatively young. Common observation leads us to expect, however, that eventually the son will assume or be granted the status of Principal Operator. Thus, it is important to examine the relationship between the age of the father (and the son) and operator status--Principal or Secondary--of the partnership farm.

The primary interest of this study is in the division of decision-making and farm tasks in the joint enterprise. For this purpose the father and the son were each asked to respond to 56 questions covering typical farm decisions and tasks. These questions were developed with respect to six major livestock and crop enterprises--beef cattle, hogs, dairying, tobacco, corn, and soybeans--and general decisions and tasks that apply to nearly all farms. (The 56 questions to which each father and son responded are appended to this report.) In each case the father and the son, separately, were asked to indicate how the decision or task was performed, whether by the "father only," the "father mostly," the "father and son equally," the "son mostly," or the "son only." If the joint farming operation was a genuine partnership, most of these decisions and tasks presumably would be shared. Despite this, however, if the distinction between "Principal" and "Secondary" operator of the farm has real significance, we would expect to find some biasing of responsibilities in the direction of the person (father or son) who was designated as the Principal Operator. The second major question of this report thus concerns the extent (a) to which these decisions tend to be shared equally and (b) the extent to which the Principal Operator has responsibility for those tasks that are not shared.

Much variation in decision-making and task performance, of course, is to be expected on father-and-son farms. In designing the study, three kinds of variation were expected. One of these was with respect to Principal and Secondary Operator statuses, which has been mentioned. Another possible source of variation is with respect to the type of decision or task itself. Decisions and tasks can be classified in at least two different ways. On the one hand, they can be classified as to their general importance for the long-run success of the farming operation itself. For example, it was thought that the decision to borrow money was of more general importance than the decision whether to put up hay. Studies of large, corporate organizations indicate a tendency for decisions and tasks to be separated on the basis of their importance for resource and organizational

policy, the allocation of resources (management and operations), and technical or productive (implementing) operations of the firm (Parsons, 1960:28-35). This suggests the third question which is explored in this report: to what extent does the Principal Operator retain control of the policy and managerial, in contrast to the more narrowly defined "implementing" decisions and tasks--the latter requiring less managerial competence?

Another obvious classification of decisions and tasks is with respect to the major enterprise. The fourth question investigated, thus, is whether there is a tendency for the father (or son) as the Principal Operator to have primary responsibility for different enterprises. In other words, for example, do fathers as Principal Operators most often tend to have primary responsibility for the beef cattle enterprise while their sons have primary responsibility for crops?

In that the transfer of the farming operation from the father to the son involves the performance of decisions and tasks in the farming operation, a major issue concerns the way in which these responsibilities change as the father's (and son's) age increases. It is possible for the process of transferring responsibilities to take place in two different ways. One alternative is that at some point as the father grows older he and his son reach a decision as to who henceforth will be the Principal Operator, and at this point they may make a substantial change in the responsibility for decisions and tasks. Another alternative is that there is a progressive transfer of decision and task responsibilities from the father to the son as the father grows older with the result that, eventually, they come to recognize that the son rather than the father is the Principal Operator. The fifth question investigated in this report, thus, has to do with the relationship between the age of the father (and son), Principal Operator Status, and the performance of decisions and tasks on the farm. It should provide information on the age-related process by which transfer of functions typically occurs.

Previous research has indicated that the efficiency of farming operations on single operator farms progressively declines after the farmer reaches 40 years of age. It would seem, therefore, that this specifies a critical period in which, if the efficiency of farming operations is to be maintained, the primary control of farming operations on father and son farms should be transferred to the son. The data collected in this study indicate that most transfers take place when the father is in his fifties or early sixties. Often the father retains the status of Principal Operator until he is much older, with possibly adverse consequences for the farming operation. The final question with which we are concerned in this report thus is: what distinguishes those fathers (and sons) for whom the transfer of primary responsibility takes place relatively early from those for whom the transfer occurs later in life? By examining some of the characteristics of these two groups of fathers and sons, we hope to be able to provide information about the factors that encourage (or inhibit) the transfer of farm decisions and tasks from the father to the son as the father approaches his own retirement.

FINDINGS

Farm and Operator Characteristics

The 145 father-and-son farms studied were much larger than the typical

partnership farm described at the beginning of this report. The sample farms ranged in size from 50 to 3,000 acres, with a median size of 520 acres. In 1973--the year prior to the survey--when Kentucky farms achieved record sales, the median father-and-son farm sold $50,000 in farm products, and 66% of these farms had sales of more than $40,000, which placed them in the largest Economic Class of farms. The bulk of the total acreage farmed (89%) was jointly operated by the father and son, and a similar proportion of the sales came from the joint operations.

On some of the farms joint operations had been started within one to two years prior to the survey. In other cases, the partnership had existed for several decades, but the average span of time of the joint farming arrangement was 6.6 years.

The ages of the operators also varied considerably. The fathers ranged in age from 37 to 86 years old, their sons from 17 to 57 years of age. With an average age of 57.9 years, the fathers were 29 years older than their sons--the span of a typical generation. Together the fathers and sons on these farms were considerably younger (average of 43 years) than farmers on all Economic Class I to V commercial farms in Kentucky in 1969 (51 years old). They also were relatively well educated, having had 12.2 years of schooling compared with 8.4 years of school completed by all rural-farm males aged 25 or older in Kentucky in 1970.

In these respects neither the fathers and sons nor the farms which they operated were typical for Kentucky. They represent instead the top layer of farming operations in the state.

Operator Status and Age

As expected, there is a definite relationship between the age of the father and of the son and their relative status in the joint farming operation. The older the son the more likely he is to be the Principal Operator (Fig. 1). For the fathers, the proportion of each age group who were Principal Operators declined progressively after age 55, although more than half were Principal Operators through 70 years of age. However, for all fathers over 58 years of age, more than half were Secondary Operators.

While it is evident that the father often retains primary control of the joint-farm operation long past the age when he could operate the farm most efficiently if he were operating it by himself, this does not in itself indicate that the joint farming operation thereby suffers. We must examine more of the information about the way in which farm decisions were made and farm operations were conducted before attempting such an assessment. What these data do indicate is that the process of transferring primary control over the farm varies widely from farm to farm, with the transfer most often taking place as the father begins to anticipate his own retirement.

The Division of Farm Decisions and Tasks and Operator Status

The way in which fathers and sons perceived that 56 different farm decision tasks were performed on these farms is shown in Table 1. Each row of this table indicates the way in which fathers and sons as the Principal and the Secondary Operators on the same farms perceived that a particular activity was performed.

Percent of Fathers or Sons Who Are
Principal Operators

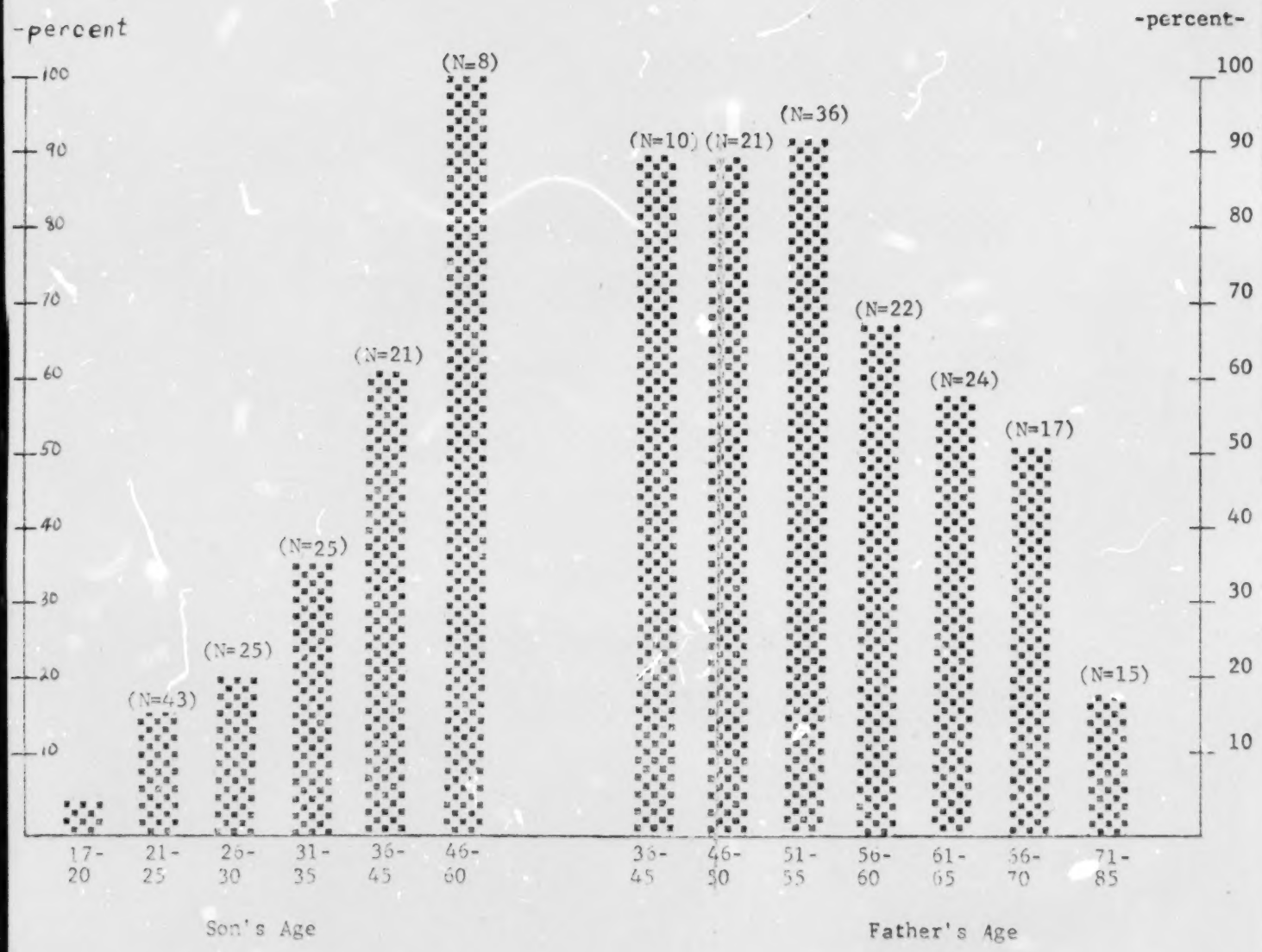

Figure 1. Age and Principal Operator Status of Fathers and Sons

TABLE 1. PRINCIPAL OPERATOR STATUS AND ROLE IN FARM DECISIONS AND TASKS OF FATHER AND SON

Decision of Task	Operator Status: Principal — Respondent	Father Only	Father Mostly	Both Equally	Son Mostly	Son Only	Total	Total Cases	Secondary — Respondent	Father Only	Father Mostly	Both Equally	Son Mostly	Son Only	Total	Total Cases	Function of Activity
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
		-percent-								-percent-							
Tobacco																	
1. Location of plant bed	Father	23	23	49	3	2	100	65	Son	20	18	51	5	6	100	65	M
	Son	0	3	61	11	25	100	28	Father	0	4	46	19	31	100	26	
2. Leasing in-out	Father	19	20	53	6	2	100	64	Son	21	20	45	9	5	100	65	P
	Son	7	7	50	14	22	100	28	Father	7	7	47	18	21	100	28	
3. When to sell	Father	14	18	63	3	2	100	62	Son	17	21	53	3	6	100	64	M
	Son	0	0	68	11	21	100	28	Father	0	4	63	11	22	100	27	
4. Prepares plant bed	Father	11	23	54	3	9	100	69	Son	7	20	58	9	6	100	69	I
	Son	0	4	40	20	36	100	25	Father	0	0	33	17	50	100	24	
5. Cuts tobacco	Father	3	8	67	11	11	100	64	Son	2	3	69	12	14	100	58	I
	Son	0	0	27	23	50	100	22	Father	0	0	22	17	61	100	23	
Corn																	
6. Acres to plant	Father	10	15	66	7	2	100	97	Son	11	17	60	7	5	100	91	P
	Son	0	7	49	15	29	100	41	Father	0	2	64	17	17	100	41	
7. Location of field	Father	14	10	68	6	2	100	96	Son	13	13	64	7	3	100	97	M
	Son	0	7	47	17	29	100	41	Father	0	2	61	20	17	100	41	
8. When to sell	Father	13	18	62	4	3	100	97	Son	14	17	62	6	1	100	97	M
	Son	0	5	54	17	24	100	41	Father	0	2	66	12	20	100	41	
Soybeans																	
9. Acres to plant	Father	10	8	74	6	2	100	51	Son	9	8	75	8	0	100	52	P
	Son	0	0	55	15	30	100	20	Father	0	0	65	20	15	100	20	
10. Location of field	Father	12	10	72	4	2	100	50	Son	12	14	66	8	0	100	50	M
	Son	0	0	60	10	30	100	20	Father	0	0	60	20	20	100	20	

TABLE 1 (Continued)

Decision of Task	Respondent	Father Only	Father Mostly	Both Equally	Son Mostly	Son Only	Total	Total Cases	Respondent	Father Only	Father Mostly	Both Equally	Son Mostly	Son Only	Total	Total Cases	Function of Activity
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
11. When to sell	Father	15	12	65	6	2	100	52	Son	9	15	70	6	0	100	53	M
	Son	0	0	65	15	20	100	20	Father	0	0	75	10	15	100	20	
Crops: General																	
12. Takes grain to market	Father	6	24	44	15	11	100	71	Son	6	20	39	25	10	100	71	M
	Son	0	21	21	35	23	100	34	Father	0	15	6	32	47	100	34	
13. Decides crops to plant	Father	8	14	74	4	0	100	102	Son	5	19	69	5	2	100	102	P
	Son	0	0	72	14	14	100	43	Father	0	0	58	30	12	100	43	
14. Decides on new crops	Father	4	13	70	11	2	100	102	Son	6	21	58	10	5	100	102	M
	Son	0	15	46	33	16	100	43	Father	0	0	47	29	24	100	41	
15. Decides to harvest	Father	6	18	71	3	2	100	101	Son	6	19	72	2	1	100	101	I
	Son	0	0	65	19	16	100	43	Father	2	2	54	23	19	100	43	
16. Decides to plant	Father	7	17	70	4	2	100	102	Son	7	13	77	2	1	100	102	I
	Son	0	0	68	16	16	100	43	Father	2	2	55	22	19	100	42	
17. Does planting	Father	13	17	40	9	21	100	98	Son	6	24	31	16	23	100	93	I
	Son	5	5	16	26	48	100	42	Father	0	9	12	21	58	100	43	
18. Does cultivation	Father	5	14	47	20	14	100	91	Son	2	15	44	24	15	100	92	I
	Son	0	11	24	24	41	100	37	Father	0	2	24	11	63	100	38	
19. Does harvesting	Father	4	20	42	13	21	100	93	Son	1	14	41	24	20	100	93	I
	Son	0	0	33	22	45	100	40	Father	2	0	8	20	70	100	40	
20. Cuts hay	Father	2	13	67	14	4	100	93	Son	0	6	69	18	7	100	97	I
	Son	0	0	53	21	26	100	38	Father	0	3	36	15	46	100	39	
21. Decides to cut hay	Father	12	13	64	5	6	100	85	Son	11	13	71	1	4	100	84	I
	Son	8	3	54	16	19	100	37	Father	6	0	58	17	19	100	36	
22. Decides: pesticides	Father	8	15	63	10	4	100	102	Son	7	19	61	7	6	100	102	M
	Son	0	0	56	21	23	100	43	Father	0	0	44	30	26	100	43	
23. Decides: fertilizers	Father	12	24	52	7	5	100	102	Son	16	29	42	9	4	100	102	M
	Son	0	16	42	16	26	100	43	Father	2	5	46	19	28	100	43	

TABLE 1 (Continued)

Decision or Task	Respondent	Father Only	Father Mostly	Both Equally	Son Mostly	Son Only	Total	Total Cases	Respondent	Father Only	Father Mostly	Both Equally	Son Mostly	Son Only	Total	Total Cases	Function of Activity
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
24. Applies pesticides	Father	11	9	34	16	30	100	91	Son	6	19	23	26	26	100	88	I
	Son	0	5	8	20	67	100	39	Father	0	3	5	19	73	100	37	
Beef Cattle																	
25. Decides: expand or reduce numbers	Father	7	10	70	8	5	100	74	Son	6	17	62	11	4	100	72	P
	Son	6	0	71	17	6	100	34	Father	6	3	73	9	9	100	34	
26. Decides: sire	Father	10	16	56	8	10	100	73	Son	11	20	47	12	10	100	72	P
	Son	6	0	55	24	15	100	33	Father	6	0	67	12	15	100	34	
27. Decides to sell	Father	9	18	62	7	4	100	75	Son	8	22	60	7	3	100	73	M
	Son	6	3	71	14	6	100	34	Father	6	0	73	9	12	100	34	
28. Decides on treatment for disease	Father	15	9	48	4	24	100	54	Son	10	11	60	4	15	100	52	I
	Son	3	0	63	9	25	100	32	Father	6	0	55	16	23	100	31	
Dairying																	
29. Decides: expand or reduce	Father	10	10	66	7	7	100	29	Son	7	14	55	17	7	100	29	P
	Son	0	0	40	30	30	100	10	Father	0	0	55	18	27	100	11	
30. Decides on sire	Father	10	14	52	10	14	100	29	Son	17	14	41	11	17	100	29	P
	Son	0	0	20	30	50	100	10	Father	0	0	46	18	36	100	11	
31. Decides on milking system changes	Father	14	25	43	7	11	100	28	Son	17	14	18	17	4	100	29	P
	Son	0	0	40	30	30	100	10	Father	0	0	55	18	27	100	11	
32. Decides: disease prevention or control	Father	18	14	57	0	11	100	28	Son	14	21	43	18	4	100	28	I
	Son	0	0	30	50	20	100	10	Father	0	0	30	30	40	100	10	
33. Does milking	Father	11	4	50	21	14	100	28	Son	3	7	47	20	23	100	30	I
	Son	0	8	25	17	50	100	12	Father	0	8	8	25	59	100	12	
34. Cleans milking parlor	Father	7	7	50	18	18	100	28	Son	0	10	48	14	28	100	29	I
	Son	0	9	27	18	46	100	11	Father	0	10	20	10	60	100	10	

TABLE 1 (Continued)

Decision of Task	Respondent	Father Only	Father Mostly	Both Equally	Son Mostly	Son Only	Total	Total Cases	Respondent	Father Only	Father Mostly	Both Equally	Son Mostly	Son Only	Total	Total Cases	Function of Activity
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Hogs																	
35. Decides: expand or reduce numbers	Father	12	7	65	0	16	100	40	Son	16	6	67	3	8	100	37	P
	Son	0	0	67	20	13	100	15	Father	0	0	74	13	13	100	15	
36. Decides: sire	Father	21	5	54	2	18	100	39	Son	19	11	56	6	8	100	36	P
	Son	0	0	50	31	19	100	16	Father	6	0	63	6	25	100	16	
37. Decides to sell	Father	13	5	68	0	14	100	37	Son	11	14	66	0	9	100	35	M
	Son	0	0	75	13	12	100	16	Father	0	6	75	6	13	100	16	
38. Decides to treat for disease	Father	28	13	37	10	12	100	40	Son	16	8	60	16	0	100	37	I
	Son	0	0	59	23	18	100	17	Father	6	0	56	19	19	100	16	
Livestock: General																	
39. Decides on culls	Father	8	13	72	5	2	100	95	Son	6	22	61	10	1	100	97	I
	Son	0	5	68	19	8	100	37	Father	3	8	40	32	17	100	40	
40. Decides: weaning and care	Father	10	17	63	8	2	100	93	Son	4	21	59	14	2	100	93	I
	Son	0	5	67	15	13	100	40	Father	0	7	32	38	23	100	40	
41. Decides type of stock*	Father	6	14	75	5	0	100	96	Son	4	21	70	4	1	100	98	P
	Son	0	5	83	7	7	100	41	Father	2	5	59	22	12	100	41	
42. Decides on feeds	Father	9	19	63	6	3	100	97	Son	4	22	64	10	0	100	97	I
	Son	0	2	54	32	12	100	41	Father	0	2	44	29	25	100	41	
43. Does feeding	Father	8	18	50	17	7	100	95	Son	4	14	52	16	14	100	95	I
	Son	0	2	41	31	26	100	39	Father	0	10	20	35	35	100	40	
44. Care at calving or farrowing	Father	5	23	55	10	7	100	92	Son	3	19	60	11	7	100	94	I
	Son	0	2	45	29	24	100	38	Father	0	8	36	25	31	100	39	
Equipment and Property																	
45. Decides to repair buildings or fences	Father	14	34	50	2	0	100	101	Son	9	37	51	3	0	100	101	M
	Son	0	12	69	7	12	100	42	Father	5	19	54	12	10	100	42	

TABLE 1 (Continued)

Decision of Task	Respondent	Father Only	Father Mostly	Both Equally	Son Mostly	Son Only	Total	Total Cases	Respondent	Father Only	Father Mostly	Both Equally	Son Mostly	Son Only	Total	Total Cases	Function of Activity
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
46. Decides to purchase machinery	Father	11	17	64	5	3	100	102	Son	15	22	52	10	1	100	102	M
	Son	0	11	56	19	14	100	43	Father	2	5	63	14	16	100	43	
47. Cleans barns and feeders	Father	7	17	46	16	14	100	93	Son	1	14	50	16	19	100	90	I
	Son	0	3	41	20	36	100	39	Father	6	0	19	22	53	100	36	
48. Repairs buildings or fences*	Father	5	21	61	10	3	100	98	Son	2	13	67	14	4	100	98	I
	Son	3	10	46	23	18	100	39	Father	0	15	46	26	13	100	39	
49. Repairs machinery	Father	5	19	47	15	14	100	100	Son	3	12	53	20	12	100	96	I
	Son	8	3	25	32	32	100	40	Father	5	2	32	13	48	100	40	
Management: General																	
50. Keeps farm records	Father	23	27	27	5	18	100	86	Son	21	36	19	13	11	100	90	P
	Son	0	7	30	15	48	100	40	Father	13	5	26	15	41	100	39	
51. Supervises hired hands	Father	14	22	49	7	8	100	97	Son	6	25	54	12	3	100	100	M
	Son	0	5	41	23	31	100	39	Father	0	2	29	24	45	100	42	
52. Buys farm supplies	Father	14	27	42	12	5	100	102	Son	11	23	52	11	3	100	102	M
	Son	2	12	35	21	30	100	42	Father	5	2	33	23	37	100	43	
53. Decides to purchase insurance	Father	24	25	49	1	1	100	102	Son	24	38	35	2	1	100	101	M
	Son	0	14	72	7	7	100	43	Father	7	7	76	5	5	100	43	
54. Decides to hire extra help	Father	12	23	57	4	4	100	99	Son	14	29	46	9	2	100	102	M
	Son	0	5	56	18	21	100	43	Father	2	2	48	22	26	100	42	
55. Decides to borrow money	Father	17	28	53	0	2	100	100	Son	24	20	50	4	2	100	102	P
	Son	0	2	64	22	12	100	42	Father	3	0	68	17	12	100	42	
56. Decides to rent more land*	Father	5	20	69	2	4	100	96	Son	11	18	66	3	2	100	101	P
	Son	0	2	64	12	22	100	41	Father	0	0	53	21	26	100	42	

*Omitted in other analyses

Thus, for example, in the first seven columns of the first row the percentage distribution is shown for the responses of fathers who were Principal Operators to the question: "Who decides where the tobacco plant bed should be located?" In this case, 49% of these fathers indicated that they and their sons shared equally (or together) in the decision. In columns 9 to 15 of this same row the percentage distribution of responses to the same question by the sons who were the Secondary Operators on these farms is reported. Forty-six percent of the sons indicated that the decision on the location of the tobacco plant bed was made by both of them together. In the second row of the table the distributions of responses to the same question by fathers and sons on farms where the son was the Principal Operator and the father the Secondary Operator are shown. The numbers of fathers and sons responding to each question are shown in columns 8 and 16. The last column (17) of the table indicates whether the particular question is regarded as pertaining primarily to resource or organizational policy (P), managerial (M), or day-to-day implementation (I) aspects of the farming operation. This pattern is repeated for each pair of rows for each of the 56 questions.

Inspection of the distributions of responses leads to several conclusions about the way in which fathers and sons perceived the performance of farm decisions and tasks. First, although the distributions for the fathers and the sons on the same farms are not identical, they are quite similar. Statistical analyses of the paired responses for all fathers and sons on the same farms indicate that the differences which exist could occur by chance (random) for all but two of the 56 questions. Moreover, except for one question, the father's and the son's perceptions of how farm decisions and tasks were performed were highly correlated.[3] The questions on which fathers and sons most often disagreed are numbers 41, 48, and 56, which pertain to decisions about the type of livestock to raise and the renting of additional land, and the task of repairing farm buildings and fences. For each of the remaining 53 questions there is thus substantial agreement between fathers and sons on the pattern of responsibility on each farm. This is quite important for, although we do not know how accurately the perceptions of fathers and sons reflect their actual involvement, both partners at least perceive the involvement of each of them in these activities in much the same way. This strengthens our confidence that the responses which the fathers and sons have made to these questions reflect an important and "real" aspect of their relationship to each other in carrying-out farming operations.

Second, the involvement of the father, the son, and both together in each activity varies from farm to farm. In some cases the decision is made by the father or primarily by him. In other cases, both share equally in the decision and in still other cases the son primarily makes the decision or does so on his own. Clearly, fathers and sons on different farms allocate or divide responsibilities for these decisions and tasks in different ways.

Third, there is considerable variation among the different decisions and tasks in the way responsibilities are divided. It suggests that neither the

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[3] Pairwise t-tests of the means for fathers and sons on the same farms indicates a significant difference at the 5% level for only two items. Moreover, the pairwise correlations exceed 0.5 for all items except one. The average correlation between the father and son responses for the 53 items on which there is most agreement is 0.67.

father nor the son typically has primary responsibility for all the farm decisions and tasks. Instead, responsibility is somewhat related to what the decision or task is. As the Principal Operator, for example, the father, was most heavily involved in making decisions on location of the tobacco plant bed, the repair of buildings and fences, keeping farm records, buying farm supplies, purchasing farm insurance, and borrowing money. As the Secondary Operator (i.e., when the son was the Principal Operator) the father was most heavily involved in decisions on leasing tobacco acreage, marketing grain crops, culling cows for sale, repair of buildings and fences, keeping farm records, purchasing farm insurance, and in feeding livestock. When he was the Principal Operator the son was heavily involved in all of the farm tasks. In as much as his father was often 55 years of age or older, the greater involvement of the son in this case might be expected. The son as Principal Operator also was heavily involved in making decisions on the acreage to be planted in corn and soybeans, and use of pesticides; also, in all decisions with respect to dairy operations, in the choice of hog sire, and in the purchase of machinery. Later, we will examine further the extent to which there is a systematic relationship between different types of decisions and tasks and involvement of the father and son.

Fourth, examination of the fathers' and sons' responses for different farm decisions and tasks indicates that (a) there was a systematic difference in involvement of the father and the son based on who was the Principal Operator of the farm, and (b) on most farms both the father and son were more often equally involved in these activities than was either the father or son individually. The tendency to equal involvement is evident for all but two of the farm tasks and decisions when the father is the Principal Operator. It is characteristic of 33 of the 56 activities when the son was the Principal Operator.

The overall relationship between Principal Operator status of the father and son and involvement in the 53 farm decisions and tasks for which there is general agreement on how they are performed is shown in Table 2. In this table the responses of fathers and sons for all the activities have been summarized. For all activities on all farms, therefore, most activities (54.6%) were shared equally by the father and the son, and those that were not shared were about equally divided between the father and the son.

However, when the activities on farms on which the father was the Principal Operator are considered over half (56.8%) of them were performed by the father and son equally, but the father more often than the son performed those activities that were not shared. As expected, the situation is reversed when the son was the Principal Operator, although the tendency to share in farm decisions and tasks was somewhat less pronounced and the son more often performed the activities that were not shared than was the case when the father was the Principal Operator. These differences are reflected both in the means for the distributions for fathers and sons and in the coefficient of association (D)[4], which indicates relatively strong association between operator status and the performance of all decisions and tasks. The significance of these findings is that while most activities were shared on father-and-son farms, the position of Principal (or Secondary) Operator is associated with a substantial difference in who decides or does the bulk of those activities that are not equally shared.

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[4] Somar's D varies between -1.0 and +1.0 with 0.0 indicating no association between the two variables.

TABLE 2. PRINCIPAL OPERATOR STATUS OF FATHER AND SON AND ROLE, 53 DECISIONS AND TASKS

Principal Operator	Activity Performed by: Father Only (2)	Father Mostly (3)	Father and Son Equally (4)	Son Mostly (5)	Son Only (6)	Total	Mean
			-percent-				
Father	11.0	17.2	56.8	7.7	7.3	100.0 (N=4,046)	3.83
Son	1.0	4.6	49.6	20.0	24.8	100.0 (N=1,707)	4.63
TOTAL	8.0	13.5	54.6	11.4	12.5	100.0 (N=5,753)	3.98

Somar's D = -.41

Principal Operator Control of Policy, Managerial, and Implementing Activities

Farm decisions and tasks differ in their scope or long-range signficiance for the farming operation. Based on studies of large businesses we attempted to classify the questions prior to the actual survey with respect to their primary function for the policy, operations and management, or day-to-day aspects of farm operations. Although the classification of many of the items may be debated, exactness of the classification is less important for purposes of determining whether the Principal Operator tends to retain primary control of those decisions that have greatest long-range significance for the enterprise than the extent to which tendencies among the items in the latter respect have been identified. Even in this respect different "experts" may disagree on the placement of individual items. Nevertheless, the classification which we have made--column 17 in Table 1--should enable us to determine whether there is a tendency for the Principal Operator more often to maintain or exercise control over decisions of longer-range importance than those having lesser significance in this report.

In assessing the extent to which the Principal Operator tends to exercise control of decisions, we can compare the sizes of the percentages in columns 2 and 3 of Table 1 to those in columns 5 and 6. In doing so it is evident that for most policy items the Principal Operator more often primarily made the decisions than did the Secondary Operator regardless of who was the Principal or Secondary Operator. However, the bias in the direction of Principal Operator control was greater when the son was the Principal Operator than when the father held this status. The only discrepancies in this pattern occur with respect to decisions to increase or decrease the size of the beef cattle or the dairy herd. In these cases the sons who were Secondary Operators more often made the decisions than did their fathers.

A similar pattern of relatively greater Principal Operator control of decisions and tasks is evident for the 18 managerial type items. Moreover, when the son was the Principal Operator his control was relatively greater than when the father was the Principal Operator.

In that the "implementing" of decisions and tasks primarily involves day-to-day operations on the farm, a shift in involvement of the Principal and Secondary Operator was expected, and where the father was the Principal Operator this occurred. The data indicate that the son was more heavily involved than was his father in decisions and tasks of this kind. However, there is no noticeable shift in the direction of the father more often performing "implementing" type tasks when his son was the Principal Operator. Instead, the son more often performed these tasks, too.

The overall patterns of performance of different types of decisions and tasks can be more easily determined, perhaps, by combining the responses to all items of each type, as in Table 3. When the father was the Principal Operator he more often made the policy and managerial decisions, which were not shared, than did the son, but there is little difference between the two types in the extent to which this occurred. For day-to-day decisions and tasks the son was almost as likely as his father to be the one who primarily performed those decisions and tasks which were not equally shared.

Contrary to expectations, however, the patterns of relative control of, or involvement in, decisions and tasks are essentially the same when the son was

TABLE 3. PRINCIPAL OPERATOR STATUS OF FATHER AND SON AND ROLE, 53 DECISIONS AND TASKS

Principal Operator	Activity Performed by: Father Only (2)	Father Mostly (3)	Father and Son Equally (4)	Son Mostly (5)	Son Only (6)	Total	Mean
			-percent-				
Father	11.0	17.2	56.8	7.7	7.3	100.0 (N=4,046)	3.83
Son	1.0	4.6	49.6	20.0	24.8	100.0 (N=1,707)	4.63
TOTAL	8.0	13.5	54.6	11.4	12.5	100.0 (N=5,753)	3.98

Somar's D = -0.41

TABLE 4. PERFORMANCE OF FARM DECISIONS AND TASKS BY LEVEL OF IMPLEMENTATION FOR FATHER AND SON AS PRINCIPAL OPERATOR

Level of Implementations of Activity	Actions Performed by: Father Only	Father Mostly	Father and Son Equally	Son Mostly	Son Only	Total	Mean
			-percent-				
A. Father as Principal Operator:							
Policy	13.2	16.5	58.4	5.1	6.8	100.0 (N=812)	3.76
Managerial	12.7	19.8	57.5	6.2	3.8	100.0 (N=1,514)	3.71
Instrumental	8.4	15.8	55.1	10.2	10.5	100.0 (N=1,730)	3.99
	Somar's D = -0.10						
B. Son as Principal Operator:							
Policy	1.8	2.6	54.1	19.0	22.5	100.0 (N=342)	4.58
Managerial	0.5	7.3	53.8	17.7	20.7	100.0 (N=643)	4.51
Instrumental	1.2	2.9	43.8	22.5	29.5	100.0 (N=721)	4.75
	Somar's D = -0.10						

TABLE 5. PERFORMANCE OF 53 FARM DECISIONS AND TASKS BY AGE OF FATHER

Age of Father	Actions Performed by: Father Only	Father Mostly	Father and Son Equally	Son Mostly	Son Only	Total	Mean
			-percent-				
65 years or older	4	4	48	18	26	100.0 (N=1,435)	4.00
45 to 64 years	9	14	56	10	11	100.0 (N=3,431)	4.01
Less than 45 years	14	27	52	4	3	100.0 (N=905)	3.54
	Somar's D = 0.32						

the Principal Operator. If the Principal Operator exercised control of policy decisions and delegated the day-to-day ones to the Secondary Operator, the father in this case should more often have carried out the implementing tasks and made decisions of this type. But, he did not do so. In fact, the son as the Principal Operator more often handled the implementing decisions and tasks than he did those of a policy or managerial nature.

From this we conclude, first, that there is little difference in the extent to which the Principal Operator primarily performs policy and managerial types of decisions and tasks regardless of whether the father or the son is the Principal Operator. Second, the son more often primarily performs implementing tasks and decisions than he does the policy or managerial ones regardless of his status in the joint farming arrangement. Third, despite these differences, the types of decisions and tasks are more often shared equally than they are performed by one of the partners except in the case of the implementing decisions and tasks when the son is the Principal Operator. In the latter case, the greater involvement of the son is undoubtedly related to the age and diminished energy of the father. As the father's energy declines, it is obviously easier for him to sustain his involvement in policy and managerial decisions than those which require greater physical labor. This effect of the greater age of fathers on farms where the son was the Principal Operator also accounts for the greater involvement of the son in all types of decisions and tasks on these farms, and we will examine this relationship more fully in the next section. Finally, owing primarily to the predominant tendency to share equally in all types of decisions and tasks, differences in the tendency for one of the partners to primarily perform one type of decision and task, rather than another type, were comparatively small. In other words, to the extent that it exists at all, the tendency for the Principal Operator to primarily control, or be involved in, particular types of decisions and tasks is of relatively small importance.

Differences in the Father's and the Son's Responsibilities for Major Enterprises

Several questions were asked about who decided or did different things which pertain to major farm enterprises: beef cattle, dairying, hogs, tobacco, corn, and soybeans. The issue is whether the Principal Operator generally tends to be more involved in making decisions or doing tasks for one type of enterprise than he is for other enterprises or for all other aspects of the farming operation. Although the possibility of reaching a firm conclusion is limited by the number of questions asked with respect to each enterprise, the division of responsibility for the three items of a policy or managerial nature for each major enterprise can be compared to the pattern of responsibility for all such questions which were asked.

When the father was the Principal Operator there was little difference in decisional responsibilities except for dairying and hogs. For each of the major enterprises, half or more of the decisions and tasks were equally shared by the father and son. On farms where hogs were raised, however, the father as the Principal Operator was somewhat more likely to delegate decisions about the increase or decrease in hog production, the sire, and when to sell pigs to his son (15.5%) than was true for all types of policy and managerial decisions (4.8%). Similarly, on dairy farms, the son (as the Secondary Operator) made 10.5% of the decisions pertaining to expanding or reducing dairy production, the sire, or major changes in the milking system.

On farms where the son was the Principal Operator, differences in patterns of decision making among the major enterprises were small except for dairying. In this case, 68.7% of the decisions of the three policy or managerial items were primarily or exclusively made by the son compared with 39.5% of all the decisions of this kind. Only 31.3% of these decisions pertaining to the dairy operation were shared with the father compared with 53.9% of all decisions of a policy or managerial nature. It is thus evident that on dairy farms the son more often had the primary decisional responsibility, especially so when he was the Principal Operator. More than for the other enterprises dairying entails a major commitment of time, and the son's involvement more often may be a critical factor in the continuation of the enterprise. The importance of the son's involvement thus may be reflected in the more rapid acquisition of decisional responsibilities while the father is still the Principal Operator and the son's relatively greater control of the dairy operation when he becomes the Principal Operator.

Age, Operator Status, and Role in Farm Decisions and Tasks

If the father progressively withdraws from farm decisions and tasks as he grows older, as we expect, older age groups of fathers should be less involved (and their sons more involved) in these activities. This pattern of shifting responsibilities is indicated in Table 5. While the fathers under 45 years of age primarily performed 41% of all the decisions and tasks, the fathers aged 65 years or older performed only 8%. By contrast, sons of the youngest fathers primarily performed only 7% of the decisions and tasks compared with 44% primarily performed by sons of the oldest age group of fathers. The increasing involvement of sons of older fathers also is revealed by the stepwise increase in the means for each age group and the coefficient of association (D = 0.32) which indicates a moderately strong association between age of father and increasing involvement of the son in farm activities.

We already know, of course, that none of the youngest age group of fathers was a Secondary Operator while many of the oldest age group were Secondary Operators and that fathers as Secondary Operators were much less involved in farm activities than were their sons as Principal Operators. Therefore, part of this shift in involvement of the father and son is due to change in operator status. To determine the effects of the father's age on his declining involvement independent of his operator status, it is thus necessary to examine the age-related involvement of the father as Principal Operator separately from that of the Secondary Operator.

Table 6, which shows these relationships, indicates that the father's involvement in farm decisions and tasks declines (and his son's increases) with increased age regardless of whether the father was the Principal or the Secondary Operator of the farm. For example, the youngest age group of Principal-Operator fathers primarily performed 27% of the decisions and tasks compared with only 14% by the oldest age group. Moreover, fathers as Secondary Operators who were 45 to 64 years of age primarily performed 8% of these activities compared with only 4% which were primarily performed by those aged 65 years or older. Once again, the means for each of the age-related groups indicates the increasing involvement of the son for older groups of fathers.

An additional point is that age of the father is more importantly related to his involvement in decisions and tasks on the farm if he was the Principal Operator than if he was the Secondary Operator. This is most clearly indicated,

TABLE 6. PERFORMANCE OF 53 FARM DECISIONS AND TASKS BY OPERATOR STATUS AND AGE OF THE FATHER

Operator Status and Age of Father	Actions Performed by: Father Only	Father Mostly	Father and Son Equally	Son Mostly	Son Only	Total	Mean
			-percent-				
Principal							
65 years or older	7	7	55	11	20	100.0 (N=576)	4.30
45 to 64 years	11	17	58	8	6	100.0 (N=2,585)	3.82
Under 45 years	14	27	52	4	3	100.0 (N=905)	3.54
Somar's D = 0.22							
Secondary							
65 years or	2	2	42	23	31	100.0 (N=859)	4.80
45 to 64 years	3	5	48	16	28	100.0 (N=846)	4.61
Under 45 years	--	--	--	--	--	--	--
Somar's D = 0.10							

Somar's D for Principal and Secondary Operators aged 45 to 64 years = -0.38.
Somar's D for Principal and Secondary Operators aged 65 years or older = -0.30.

perhaps, by the larger coefficient of association (D = 0.22) for Principal Operators than for Secondary Operators (D = 0.10). But, it is also indicated by the larger increase in the means between each of the age groups of Principal Operators than between the age groups of Secondary Operators. This suggests that once the father's status has shifted from Principal to Secondary Operator of the farm, the progressive decline in his involvement (or increase in that of the son) is slower. Or, to put it another way, although the father may retain the status of Principal Operator his involvement declines as he grows progressively older, and the decline is more rapid than for fathers who have accepted a secondary position in the joint farming arrangement.

Even so, at every age fathers who were Principal Operators were more involved in decisions and tasks on the farm than were those who were Secondary Operators. That this is so can be seen by comparing the percentages or the means for Principal and Secondary Operators of the same age. For example, the means for Principal and Secondary Operators who were 65 years of age or older are 4.30 and 4.80, respectively, and the lower mean for Principal Operators, of course, indicates greater involvement of the father. As measured by the coefficients of association (below Table 6), the overall relationships between operator status and performance of farm decisions and tasks were of moderate strength for both of the two older age groups of fathers.

In summarizing these findings, it is evident that operator status and role involvement in farming activities are two related, but somewhat independent, variables which describe the nature of the father and son farming arrangement. Both are related to the age of the father. In other words, the father's status on the farm shifts and his involvement declines as he grows older while the son's involvement increases. In general, however, there is little evidence that a shift in operator status precedes a decline in involvement or that the reverse occurs. Instead, the process of change in the father's and son's status and role in the joint farming arrangement varies from farm to farm, and its precise nature doubtless depends on other characteristics of the father and the son.

At this point it is appropriate to again raise the question as to what these data indicate with respect to the problem of maintaining efficiency in the farming operation through the transfer of responsibility from the father to the son as the former increases in age. In that the sons who had become Principal Operators (i.e., the father was the Secondary Operator) primarily controlled the farming operation, the evidence clearly suggests that at least in this respect the farming arrangement was organized for optimum efficiency. Consequently, the issue of inefficiency in farming operations primarily concerns those farms on which the father had retained Principal Operator status. For the oldest age group of Principal-Operator fathers, the son primarily controlled the decisions which were not shared equally even though the son's control was not so great as it was if he, rather than his father, was the Principal Operator (Table 6). In this case, therefore, the efficiency of the farming operation should not suffer much, if at all, because the father had retained his status as Principal Operator.

The situation was different, however, for fathers aged 45 to 64. They were twice as likely to control the decisions or tasks, which were not shared equally, as were their sons. Although we do not know whether this tendency was characteristic of all farms, or only some of them, the organization of responsibilities on at least some of them was not well-suited to obtaining maximum input from the son. Moreover, it seems likely that in itself the existence of a father-and-son

partnership in this case has not entirely prevented the decline in farm efficiency associated with the aging of the Principal Operator. This conclusion must be advanced cautiously, however, for, while it is clear that the son often lacked as much responsibility as would be desirable in view of his father's age, we cannot be certain that each of the farms would have been operated more efficiently if the son had had more responsibility. After all, the son did have considerable input in each case, and various factors may have been present which would have had detrimental effects on farming efficiency if the son had had more responsibility. Even so, the possibility of a loss in efficiency owing to the father's retention of Principal Operator status and substantial control of decision making is an important consideration. It merits further analysis as this group includes 55% of the sample of father and son farms. If greater efficiency in farming operations could have been obtained by giving more responsibility to the son, then it is quite important to try to understand why a greater transfer of responsibility has not taken place.

Differences Between Principal- and Secondary-Operator Fathers Aged 45 go 64 Years

We would like to know why some fathers in this age group have transferred primary status and responsibility for decision making to their sons while others have not done so. Unfortunately, information bearing directly on this question is not available, as the fathers were not asked why they had retained Principal Operator status rather than transferring it to a son in each case. Some insight into the nature of the transfer problem can be gained, however, by examining ways in which Principal Operators differ from Secondary Operators of the same age. Much information was obtained about the characteristics of the fathers and sons and their farm situations. Differences between Principal and Secondary Operators may suggest major issues and interests with which fathers have been concerned in transferring responsibility to a son, or in failing to do so. Table 7 summarizes the findings for those factors on which differences were found.

One of the most noteworthy factors concerning which fathers aged 45 to 64 years who were Principal Operators differed from those who were Secondary Operators was in the ages of their sons. A substantially greater proportion (nearly twice as many) of the sons of Principal than Secondary Operators were under 25 years of age, and in median age the sons of these Principal Operators were 5 years younger.

Clearly, they had had less farming experience and had been engaged in the partnership farming arrangement with their fathers for a shorter period of time. But it does not seem likely that the son's lack of experience was the principal factor in the father retaining Principal Operator status, since many of the sons were more than 25 years old and there were many with the same age and farming experience who did manage farms of substantial size. In consequence, it seems likely that the reluctance of the fathers to turn over greater responsibility to their sons relates less to the actual deficiencies in the abilities of the sons than to the attitudes which the fathers held toward their own role in the farming operation and that of their sons.

Most of the Principal Operators (80%) were engaged full time in the farming operation, and proportionately more were thus involved, as might be expected, than was the case for fathers who were Secondary Operators (63%). The difference in this case is less important than that the level of commitment of the fathers as Principal Operators was relatively high. In other words, so far as interest is reflected in work time, there is little evidence that the father's interest in

TABLE 7. DIFFERENCES BETWEEN FATHERS AS PRINCIPAL AND SECONDARY OPERATORS AGED 45 TO 64 YEARS AND BETWEEN SONS OF THESE OPERATORS

Item	Operator Status of Father		Degree of Association (Somar's)
	Secondary	Principal	
	-percent-		
1. Son under 25 years of age	25	48	-0.48
2. Partnership established less than 5 years	40	63	-0.18
3. Father farming 250 or more days during 1973	63	80	0.24
Farming Priorities			
4. Father ranks "getting out of debt" as high	56	44	-0.24
5. Father ranks "higher producing livestock" as high	69	59	-0.22
6. Son ranks "higher producing livestock- as high	84	63	-0.21
7. Father ranks "getting labor-saving equipment" as high	41	59	0.27
8. Father ranks "expanding farm size" as high	13	32	0.23
Farm Situation			
9. Father rates past farm situation as relatively poor	58	42	0.27
Management and Enterprise Attitudes			
10. Father has relative strong faith in science	37	54	0.26
11. Son has relatively strong faith in science	35	49	0.18
12. Son more interested in crop than livestock enterprises	32	55	0.34
13. Father highly interested in dairying	72	48	-0.33
14. Father highly interested in hogs	78	36	-0.54
15. Son highly interested in hogs	67	47	-0.25
16. Son highly interested in tobacco	33	43	0.29

the farm had slackened. Instead, the continued high level of interest may have tended to inhibit recognition of the need to give greater responsibility to the son.

Although the sons of the Principal Operators of this age group were younger, their part in the joint farming arrangement was not generally smaller than that of sons of Secondary Operators as reflected in the percent of sales from the joint operation, or the percent of their labor going to the joint operations. Moreover, the farms where the father was the Principal Operator were not larger than those where the father was the Secondary Operator. In other words, the tendency of the father to maintain his status as Principal Operator was not generally related to lack of involvement of the son in the farming operation in this respect nor to the small size of the farming operation.

On the other hand, fathers in this age group differed in ways which suggest a somewhat different pattern of interests in the farm. It is reflected in the differences in farm priorities, enterprise attachments, prior farm situation, and attitude toward scientific farming which are indicated in Table 7. Compared with Secondary Operators, Principal-Operator fathers were less concerned with getting out of debt and developing better producing livestock. They tended to give higher priority to getting labor-saving equipment and expanding the scale of farming operations. The Principal Operators also tended to be relatively more satisfied with the situation of the farm in the recent past than were Secondary Operators (perhaps because of a more favorable debt situation). Moreover, Principal Operators who either had or had had dairy cattle or hogs less often displayed strong interest in these enterprises than did Secondary Operators.

For the most part, the sons who were Secondary Operators (i.e., the father was Principal Operator) differed little in their personal characteristics, farm priorities, or in other factors from those who were Principal Operators on farms with the father as the Secondary Operator. However, in their interests in farm enterprises these Secondary-Operator sons were more often interested in crops than in livestock, particularly tobacco, than were the sons who were Principal Operators, and, if they had a hog enterprise, they were like their fathers in being less often highly interested in it.

The overall picture which one gains from examination of these differences is that fathers as Principal Operators who were highly involved in modern, "scientific" farming appear relatively satisfied with their farming operations, and with their own and their sons' roles in the farming operation. The principal needs which they recognized were to acquire more capital resources and pursue much the same kind of farming operation on a larger scale. Their sons complemented these interests in being willing to shoulder relatively more of the labor required for the cropping program, especially in tobacco. Thus, in their view they had few incentives to change the pattern of major responsibility for farm decisions and task performance. By contrast, fathers who had shifted primary responsibility for farming operations to their sons' shoulders were more concerned about the well-being of the farming operation, and more often felt that intensive livestock operations (e.g., dairying or hogs) were necessary for present and future success of farming operations. With this point of view, they had more quickly established their sons as Principal Operators of the joint farming arrangements.

While this provides a plausible explanation for the differences found in the tendency for fathers in this age group to shift primary managerial responsibility

to their sons, it is based on inferences which deserve further study. In any event, we cannot be certain that the efficiency of farming operations has suffered as a result of failure to turn over more of the responsibility to their sons. To the extent that the sons have complemented their fathers' interests and abilities, little in the way of efficiency in farming operations may have been lost. On the other hand, to the extent that these Principal Operators feel pressure to over-extend capital investments for benefits which are of relatively short duration or fail to make other adjustments in farming operations which are needed in view of their approaching retirement, the failure to shift responsibility to the son may adversely affect the future, if not the present, efficiency of farming operations. Again, we require more information than that presently available to properly assess the present situation or its future outcome.

APPENDIX

QUESTIONS ON FARM DECISIONS AND TASKS

Tobacco

1. Who decides whether to lease in or lease out tobacco?
2. Who decides where the tobacco plant bed should be located?
3. Who decides when tobacco should be sold?
4. Who prepares the tobacco plant bed?
5. Who cuts the tobacco?

Corn

6. Who decides how many acres of corn, if any, to plant?
7. Who decides where to plant corn?
8. Who decides when to sell corn?

Soybeans

9. Who decides how many acres of soybeans, if any, to plant?
10. Who decides where to plant soybeans?
11. Who decides when to sell soybeans?

Crops: General

12. Who takes grain to market?
13. Who decides what crops to plant?
14. Who decides whether or not to try a new crop variety?
15. Who decides when to harvest crops?
16. Who decides when to plant crops?
17. Who does the planting of corn, soybeans, and small grains?
18. Who does the cultivation?
19. Who harvests the corn, soybeans, and small grain crops?
20. Who cuts and puts up hay?
21. Who decides on when to make or put up hay?
22. Who decides whether to try weedicides or pesticides?
23. Who decides what fertilizer to buy?
24. Who applies pesticides when needed?

Beef Cattle

25. Who decides whether to increase or decrease beef cattle?
26. Who decides on or selects the type of sire to use in breeding?
27. Who decides when cattle are to be sold?
28. Who decides on the control and treatment of beef cattle for internal parasites and disease?

Dairying

29. Who decides whether to increase or decrease dairy production?
30. Who decides on or selects the type of sire to use in breeding?
31. Who decides on changes or improvements in the milking system?
32. Who decides whether to use preventive controls for disease on internal parasites with dairy cows?
33. Who does the milking?
34. Who cleans the milking parlor or house?

Hogs

35. Who decides whether to increase or decrease pig (hog) production?
36. Who decides on or selects the sires for breeding purposes?
37. Who decides when pigs are to be sold?
38. Who decides when sows and pigs are to be treated for internal parasites or disease?

Livestock: General

39. Who decides on the cows or sows to be culled for sale?
40. Who decides on the care and weaning of calves and/or pigs?
41. Who decides what type of livestock to raise?
42. Who decides on feed and supplements for livestock?
43. Who feeds the livestock?
44. Who takes care of the cows at calving time, or the sows at farrowing time?

Equipment and Property

45. Who decides when to repair farm buildings or fences?
46. Who decides when to buy major farm machinery or equipment?
47. Who cleans the barns and/or feeders?
48. Who repairs and maintains farm buildings and fences?
49. Who repairs and maintains the farm machinery?

General Management and Policy

50. Who keeps the farm records?
51. Who tells the hired men what to do?
52. Who buys or gets the needed farm supplies and materials?
53. Who decides whether to buy farm insurance?
54. Who decides to hire extra farm help?
55. Who decides whether or not to borrow money?
56. Who decides whether or not to rent more farm land?

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